What is claimed is:

1. A field emission display comprising:

an anode;

a phosphor located on the anode;

a cathode;

an evacuated space between the anode and the cathode;

an emitter located on the cathode opposite the phosphor;

wherein the emitter comprises an electropositive element both in a body of the emitter and on a surface of the emitter.

2. A display as in claim 1 wherein the distribution of the electropositive element in the body of the emitter is substantially even.

3. A display as in claim 2 wherein the electropositive element comprises and element chosen from group IA of the periodic table.

4. A display as in claim 3 wherein the electropositive element comprises Cs.

5. A display as in claim 2 wherein the electropositive element chosen from a group consisting of H, Li, Be, B, Na, Mg, Al, Ga, Ba, Rb, Ca, K, Sr, and In.

6. A display as in claim 2 wherein the electropositive element is chosen from group IIA of the periodic table.

7. A display as in claim 2 wherein the electropositive element is chosen from group IIIA of the periodic table.

8. A process for manufacturing an FED comprising the steps of:

forming an emitter comprising an electropositive element in the body of the tip;

positioning the emitter in opposing relation to a phosphor display screen;

creating an evacuated space between the emitter tip and the phosphor display screen;

causing the electropositive element to migrate to the an emission surface of the emitter.

9. A process as in claim 8 wherein said forming comprises:

forming an emitter;

contacting the emitter with a solution, the solution comprising an electropositive element as the

solute.

10. A process as in claim 9 wherein said solution comprises an alcohol solvent.

11. A process as in claim 10 wherein said electropositive element comprises an element chosen from group IA of the periodic table.

12. A process as in claim 11 wherein the electropositive element comprises Cs.

13. A process as in claim 10 wherein the electropositive element is chosen from a group consisting of H, Li, Be, B, Na, Mg, Al, Ga, Ba, Rb, Ca, K, Sr, and In.

14. A process as in claim 10 wherein the electropositive element is chosen from group IIA of the periodic table.

15. A process as in claim 10 wherein the electropositive element is chosen from group IIIA of the periodic table.

16. A process as in claim 9 wherein said contacting comprises dipping the emitter into the solution for a time sufficient to cause doping of $10^{21}/cm^3$ of electropositive material to penetrate into the emitter.

17. A process as in claim 16 wherein said solution comprises propan-1-ol as the solvent and NaCl as the solute.

18. A process as in claim 17 wherein said solution is at a temperature below the boiling point of the solvent and said contacting continues for about 15 minutes.

20. A process as in claim 16 wherein said solution comprises methanol as the solvent and CsCl as the solute.

21. A process as in claim 17 wherein said solution is at a temperature below the boiling point of the solvent and said contacting continues for about 15 minutes.

22. A process as in claim 8 wherein said forming comprises:
forming an emitter from a substrate comprising electropositive material, wherein the emitter formation causes electropositive material to be exposed and react at the surface of the emitter; and
removing reacted electropositive material.

23. A process as in clam 22 wherein exposed electropositive material forms an oxide and said removing comprises washing with a buffered oxide etch.

24. A process as in claim 22 wherein exposed electropositive material forms a salt and said

removing comprises washing with water.

25. A process as in claim 8 wherein said forming comprises:

forming an emitter;

vapor deposition of an electropositive element in on the emitter;

heating the emitter to cause the electropositive element to penetrate into the body of the emitter.

26. A process as in claim 25 further comprising removal of unpenetrated electropositive material from the surface of the emitter.

27. A process as in claim 8 wherein said forming comprises:

forming an emitter;

ion implantation of an electropositive element in on the emitter.

28. A process as in claim 8 wherein said causing the electropositive element to migrate to the an emission surface of the emitter comprises heating the display after the space is evacuated, wherein the electropositive element migrates to the surface creating a low work function for the emitter.